# POSTER PLACEMENT

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| --- | --- | --- | --- | --- |
| ***Instance*** | ***Naïve Model*** | | ***Global Model*** | |
|  | *Fails* | *Time* | *Fails* | *Time* |
| **19x19** | 1,678,013 | 24s 134msec | 300,649 | 3s 928msec |
| **20x20** | 2,504,120 | 41s 175msec | 2,030 | 372msec |

There are some observations to make after analyzing the decomposed and global models in this poster exercise. In both models, the best performance is the one that includes global constraints.

In the "Naïve" model we have a decomposition of the global cumulative constraints, whereby the problem is broken down into smaller and easier to manage constraints. What's the problem? By breaking the problem down this way, it takes longer to process and reach a solution. For this reason, in the table we can see that when the size of the problem increases, the time also increases.

The conclusion is, therefore, that the "Naïve" model takes longer to find a solution and also has many more failures than the "Global" model.

The "Global" model uses specific global constraints that allow more efficient propagation: from the data reported in the table, it is easy to see that failures and calculation time are significantly lower than the "Naïve" model. This happens because the efficiency of global propagation and the GAC allow times to be reduced.

Specifically, specific global constraints allow you to have the following advantages:

- have better propagation, obtaining more efficiency and speed,

- reduce the number of failures thanks to the relationships between the variables (which the decomposition does not allow).

To conclude, in this type of problem, which is a little more complex, it is better to use the "Global" model because it simplifies and speeds up the resolution of the problem.